

**UNITED STATES DISTRICT COURT  
NORTHERN DISTRICT OF INDIANA  
FORT WAYNE DIVISION**

LIGTEL COMMUNICATIONS, INC.,

Plaintiff,

v.

Case No. 1:20-cv-00037-HAB-SLC

BAICELLS TECHNOLOGIES INC.;  
BAICELLS TECHNOLOGIES NORTH  
AMERICA, INC.,

Defendants.

**DECLARATION OF RICK HARNISH**

I, Rick Harnish, declare the following:

1. I am a citizen of the United States of America, domiciled in the State of Indiana.
2. I hold a Bachelor's degree in Agriculture Mechanization from Purdue University.
3. I am employed as the Chief Marketing Officer of Baicells Technologies North America Inc. ("Baicells"), a position I have held since November 2019. Prior to serving in my current position, I served as Director of Wireless Internet Service Provider ("WISP") Markets for Baicells from February 2016 until November 2019.
4. Before joining Baicells, I served as Director of Business Development for InCompass Consulting Group, LLC from September 2015 until February 2016. I also previously served as Executive Director of the Wireless Internet Service Provider's Association from August 2010 until December 2014, and I have held various positions in the wireless internet service provider and internet service industry since 1995.
5. I have read the Complaint, Declaration of Randy Mead dated January 20, 2020, and Declaration of Josh Wentworth dated January 20, 2020.

6. I first became aware that LigTel Communications, Inc. (“LigTel”) had an issue with Baicells’ use of the five-digit Home Network Identity (“HNI”) code (also known as a Public Land Mobile Network (“PLMN”) code) 31198 in July 2019.

7. On July 2, 2019, Sam Tetherow of Sand Hills Wireless, a provider of business and residential internet services in Nebraska, reported to Baicells that he had received a cease-and-desist letter from an attorney representing LigTel. Mr. Tetherow submitted ticket number 15724 to support\_na@baicells.com asking for me to give him a call.

8. On July 9, 2019, I called Mr. Tetherow. Mr. Tetherow reported that LigTel had informed him that a company called Viaero Wireless (“Viaero”) claimed they were receiving spectrum interference in the 3.65-3.70 GHz shared spectrum band from someone using LigTel’s HNI Code of 311-980. I understand that Viaero is a company that offers mobile cellular, home internet, and home phone service to residents and businesses in Colorado, Kansas, Nebraska and Wyoming. See <https://www.viaero.com/about-viaero-wireless> (last visited March 31, 2020).

9. Mr. Tetherow further reported that Viaero had contacted LigTel when they mistakenly identified Baicells’ HNI code of 31198 as LigTel’s HNI Code of 311-980. Mr. Tetherow said he had temporarily resolved the issue with LigTel’s Josh Wentworth.

10. On July 9, 2019, Steve Barnes, Vice President of Operations at New Lisbon Telephone Company (“New Lisbon”), called me. Mr. Barnes said that Randy Mead, General Manager of LigTel—knowing that New Lisbon was using Baicells equipment—had called John Greene, CEO of New Lisbon, to ask questions about Baicells equipment and SIM card IMSI numbers.

11. “SIM” stands for “subscriber identification module,” and a SIM card is an integrated circuit that securely stores the international mobile subscriber identity (“IMSI”)

number and its related key, which are used to identify and authenticate subscribers on end users' devices, such as mobile phones and computers.

12. Following internal discussions regarding the issue with LigTel, on July 22, 2019, Baicells filed an application to obtain a new PLMN/HNI code with iConectiv and the Alliance for Telecommunications Industry Solutions (“ATIS”), and the IMSI Oversight Council (IOC). iConectiv is the United States IMSI Administrator which administers the HNI on behalf of the United States Department of State. See <https://imsiadmin.com/>, last visited April 1, 2020. The IOC is a committee of ATIS that oversees the performance of the IMSI administration. *Id.*

13. On July 29, 2019, iConectiv/ATIS assigned HNI code 314-030 to Baicells.

14. On the same day, July 29, 2019, I attended and participated in a meeting at LigTel’s office in Ligonier, Indiana.

15. Bo Wei, President and Chief Executive Officer, Ronald Mao, Director of Carrier Solutions, and I attended this meeting on behalf of Baicells.

16. Randy Mead, Chief Executive Officer and General Manager, Josh Wentworth, Network Operations Supervisor, and Mike Troup, Network Operations Manager and Marketing, attended on behalf of LigTel.

17. Without prior notice to Baicells, LigTel's outside counsel also participated in the meeting. This was surprising to myself and other Baicells representatives in attendance.

18. LigTel's counsel did not ask whether Baicells was represented by counsel, nor did they offer to have Baicells' counsel participate in the meeting.

19. LigTel’s outside counsel led the discussion during this meeting.

20. LigTel presented Baicells with two options during the meeting: Baicells could change the HNI code that it uses, or Baicells could buy LigTel's HNI Code and pay for LigTel to transition to a new HNI code.

21. For the second option, LigTel demanded that Baicells pay LigTel \$1 million to transfer LigTel's HNI Code to Baicells and transition LigTel to a new HNI code.

22. Baicells did not commit to either of the two options presented by LigTel at the meeting.

23. During the meeting, Wei and Mead left at one point and spoke briefly in private. I was not present for that conversation, and to the best of my knowledge, no one else was present for that conversation.

24. Before the meeting concluded, Baicells stated its intention to follow up with LigTel after Baicells had an opportunity to consult with its own outside counsel.

25. I took notes of this meeting and sent those notes by e-mail that same day to Wei and Mao. A true and correct copy of the notes I took, together with Mao's own minutes of the meeting, is attached hereto as Exhibit 1 (BAICELLS-000035337-38).

26. After the meeting at LigTel, Baicells determined to migrate away from the PLMN of 31198 to the HNI Code of 314-030.

27. In August 2019, Baicells began participating in communications and meetings with the International Mobile Subscriber Identity ("IMSI") Oversight Council ("IOC") regarding Baicells' plan to migrate to HNI Code 314-030. IOC is a division of ATIS responsible for overseeing the management of IMSI codes that have been assigned to the United States as authorized by the U.S. Department of State since 1996. (See [https://www.atis.org/01\\_committ\\_forums/ioc/](https://www.atis.org/01_committ_forums/ioc/), last visited March 31, 2020.)



28. On September 12, 2019, Baicells submitted the Baicells PLMN Migration Plan to IOC to be shared at the upcoming IOC meeting on September 20, 2019. Baicells also informed IOC that Baicells intended to begin the transition to the HNI Code 314-030 in November 2019 and complete all migrations within six to nine months of that date. (A true and correct copy of the cover email to IOC and the accompanying Baicells PLMN Migration Plan is attached hereto as Exhibit 2, BAICELLS\_000032549-55.)

29. On September 20, 2019, Baicells participated in a telephonic meeting of the IOC, at which the Baicells PLMN Migration Plan, and comments submitted by LigTel on the plan, were discussed. (A true and correct copy of the meeting agenda is attached hereto as Exhibit 3, BAICELLS-000008424-25.) I understand that during the meeting, the Baicells PLMN Migration Plan was reviewed and agreed upon by the IOC, subject to any feedback submitted by September 27, 2019. (A true and correct copy of an email from ATIS/IOC following the meeting is attached hereto as Exhibit 4, BAICELLS-000008008.)

30. LigTel subsequently submitted comments to the IOC regarding the Baicells PLMN Migration Plan, and Baicells responded to those comments.

31. Baicells participated in a follow-up telephonic meeting of the IOC on November 6, 2019. I understand that during this meeting, the IOC and meeting participants reviewed an ATIS summary of Baicells' PLMN migration plan. I further understand that Baicells agreed to provide periodic progress reports on its migration progress to the IOC, and the IOC proposed no additional changes to the Baicells PLMN Migration plan.

32. Following Wei's departure from Baicells, I assumed responsibility, along with Jesse Raasch, Chief Technology Officer and Vice President of Emerging Business, and Andy

Yang, Director of Engineering and Support, for communicating updates and periodic progress reports to IOC regarding the Baicells PLMN Migration Plan.

33. On December 20, 2019, I submitted a progress report to IOC regarding the Baicells PLMN Migration Plan. (A true and correct copy of the email to IOC and the accompanying December 20, 2019 progress report is attached hereto as Exhibit 5, BAICELLS-000007931-35.) Following this report, the IOC proposed no additional changes to the Baicells PLMN Migration Plan.

34. On February 20, 2020, I submitted a progress report to IOC regarding the Baicells PLMN Migration Plan. (A true and correct copy of the email to IOC and the accompanying February 20, 2020 progress report is attached hereto as Exhibit 6, BAICELLS\_000024195-203.) Following this report, the IOC proposed no additional changes to the Baicells PLMN Migration Plan.

35. On March 18, 2020, I submitted a progress report to IOC regarding the Baicells PLMN Migration Plan (the “March 2020 Report”). (A true and correct copy of the email to IOC and the accompanying March 2020 Report is attached hereto as Exhibit 7, BAICELLS\_000062663-74.) Following this report, the IOC proposed no additional changes to the Baicells PLMN Migration Plan.

36. The March 2020 Report stated that Baicells has begun an aggressive campaign to encourage Baicells customers to upgrade to a new firmware version utilizing the HNI Code 314-030. As a result, Baicells remains on track to meets its goal of completing the migration of all network operators to HNI Code 314-030 by the end of July 2020.

37. Baicells’ campaign to transition customers to HNI Code 314-030 began well before March 2020.

38. For example, on January 29, 2020, Baicells announced on the Baicells Website Community Forum and Facebook Operator Support Group the release of a new software version for customer base stations and that “[s]tarting with this version we will also be changing the CloudCore PLMN to 314030.” (A true and correct copy of the January 29, 2020 announcement is attached hereto as Exhibit 8, BAICELLS-000008517; *see also* <https://community.na.baicells.com/t/rts-3-4-8-new-enb-software-has-been-released/1114/3>, last visited April 1, 2020.)

39. On February 14, 2020, Baicells made the same announcement in the Baiweekly Newsletter, which is a biweekly publication sent to Baicells customers. (A true and correct copy of the February 14, 2020 announcement is attached hereto as Exhibit 9, BAICELLS-000074485-97.)

40. On March 18, 2020, Baicells announced on the Baicells Website Community Forum and Facebook Operator Support Group the release of another new software version for customer base stations and that “[s]tarting with this version we will also be changing the CloudCore PLMN to 314030.” (A true and correct copy of the March 18, 2020 announcement is attached hereto as Exhibit 10, BAICELLS-000074482-83. *See also* <https://community.na.baicells.com/t/qrtb-2-0-7-new-enb-software-has-been-released/1158>, last visited April 1, 2020.)

41. On March 18, 2020, Baicells further announced on the Baicells Website Community Forum and Facebook Operator Support Group that Baicells would be “retiring the original CloudCore PLMN” of 31198 and “replacing it with our new PLMN 314030,” effective July 1, 2020. (A true and correct copy of the March 18, 2020 announcement is attached hereto as Exhibit 11, BAICELLS-000074484. *See also*

<https://community.na.baicells.com/t/announcement-retiring-the-original-plmn-number/1162>, last visited April 1, 2020.)

42. Once Baicells completes the migration of all network operators to broadcast the new HNI/PLMN Code 314-030, there will be no risk of the sort of confusion related to spectrum interference between network operators that led to the meeting between Baicells and LigTel in July 2019.

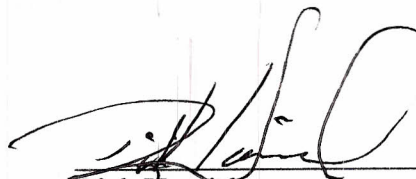
43. Since July 2019, I am unaware of any other incidents of confusion related to spectrum interference between network operators involving Baicells' use of the HNI code 31198.

44. During my employment prior to Baicells, my familiarity with LigTel was limited to general knowledge based on my experience in the wireless internet service provider industry.

45. I do not have, and have never had, possession of or access to any documents or information that LigTel alleges to be its confidential or trade secret information including, but not limited to: LigTel's encryption code; network architecture, design, and engineering; or the operational layout of LigTel's equipment, core, and servers.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on April 1<sup>st</sup>, 2020 (date) in the State of Indiana, United States of America.

  
Rick Harnish

# **EXHIBIT 1**

Message

**From:** Rick Harnish [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=6E590531F11C460581D53DA925AD6032-RICK]  
**Sent:** 7/29/2019 7:49:32 PM  
**To:** Ronald Mao [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f7ce60b974854c87898c2e04696d6f14-ronald.mao]; Bo Wei [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=a1cea1a35a254e3abca50b9b8f9fe821-bo.wei]  
**Subject:** RE: LigTel Meeting Minutes

Thank you Ronald.

I took additional notes that may also assist.

Notes

Cary Mitchell, represents Ligtel for FCC issues along with John Pendergast. Received complaint from Cellular operator in Colorado, about interference from another operator and identified PLMN conflict associated with Baicells. Operator was identified as Future Technologies, a Baicells customer in 3.65 GHz.

IMSI code assigned by IMSI administrator, Telcordia/Iconnectiv. Industry oversight council.

CBRS concern to Ligtel with new operators coming into the market. More confusion. WISPA is supposedly working on a new IMSI code with Iconnectiv. Potentially many operators using 31198. Ligtel wants to know how Baicells is going to resolve this issue.

All customers need to change SIM cards for all CPEs.

1500 customers Ligtel.

They want Baicells to resolve this issue. Baicells is obligated. Remove 31198 code from all websites and marketing materials. Commit to not use 31198 code in the future. Never properly assigned by Iconnectiv. No customers should be using this code. Very firm on this. They realize there is no method for Ligtel to enforce transition and use of this code.

Possible solution, Ligtel gets a new code and transfers all of their customer to new HNI. Baicells pays for all costs involved.

300,000 to change out sims, reprogram equipment  
100,000 customer inconvenience 1 month credit.  
Temporary staff: 50,000 for 2 people  
Inconvenience: transfer, give up code: \$550,000

CPE's vary in age, not really warm to equipment discounts, Bands 1 and 3

Transition time short.

What is reasonable time: 3-6 months.

Respectively,

**Rick Harnish**

---

**From:** Ronald Mao <ronald.mao@na.baicells.com>  
**Sent:** Monday, July 29, 2019 4:20 PM  
**To:** Bo Wei <bo.wei@na.baicells.com>; Rick Harnish <rick.harnish@na.baicells.com>  
**Subject:** LigTel Meeting Minutes

Monday, July 29, 2019 at LigTel

From Baicells: Bo, Rick, Ronald

From LigTel: Randy Mead, Mike Troup, Josh Wentworth; LigTel's attorneys: Cary Mitchel, John (Dialed-in)

Issue of discussion

An operator in Nebraska is interfering another operator in Colorado (Viaero) which also operates in Nebraska in 3.65GHz band. Viaero found the interfering operator has PLMN ID of 311980 which belongs to LigTel and complained to LigTel. LigTel reached out to the interfering operator and learned that the PLMN is 31198 assigned by Baicells. LigTel believes 31198 was not obtained properly and is in conflict with 311980. LigTel believes at least 14 operators are using 31198 in Indiana alone. LigTel plans cease and desist (C&D) against Baicells.

Demand from LigTel

LigTel wants Baicells to get its own PLMN ID, cease using PLMN ID 31198, so that LigTel will no longer get any complaint that their network is causing interference. In doing so, LigTel wants to see that

1. Baicells base stations will not broadcast 31198
2. Baicells SIM cards, old and new, do not use 31198
3. There is a policing mechanism for LigTel to verify that PLMN ID has been re-programmed and to prevent the use of 31198. One suggestion is for Baicells to send LigTel the operator list.

Option 2

LigTel recognizes that Baicells has 600+ operators and change of PLMN ID takes time and money. Therefore, LigTel offers an alternative solution which is for LigTel to transfer 311980 to Baicells. LigTel will obtain a new PLMN ID and change their 1,500 customers to new ID. However, LigTel wants Baicells to pay the expense and compensate the inconvenience. LigTel asks for \$1M. This is the breakdown

- Engineering \$300k
- Customer compensation \$100k
- Contractors \$50k
- Inconvenience, brand name protection, legal fees \$550k

Baicells counteroffer

Baicells recognizes that the PLMN ID conflict is causing confusion but does not think it is causing RF interference. LigTel may obtain a new ID and leave the old ID unchanged. For customers on the old ID, 31198 becomes a home network ID to roam into. Baicells is willing to pay \$100k and the work for LigTel is kept at minimum.

Comments from LigTel

LigTel does not like the idea of having 2 IDs. Instead, LigTel wants a clean-cut solution. LigTel does agree that the matter should be resolved amicably between the two parties and avoid going into C&D. LigTel also understands that the change of PLMN ID may take 6 months. LigTel will wait for Baicells to come back after Baicells consults with its own legal counsel.

Regards,

Ronald Mao

Director of Carrier Solutions

Baicells Technologies North America

Mobile 858-761-5060

Office 972-930-5537

# **EXHIBIT 2**



**From:** Bo Wei [bo.wei@na.baicells.com]  
**Sent:** 9/12/2019 7:01:10 PM  
**To:** Tom Goode [tgoode@atis.org]; McNamer, Natalie [nmcnamer@iconectiv.com]; Steve Barclay [sbarclay@atis.org]  
**CC:** Coran, Steve [SCoran@lrmansenter.com]; Andy Yang [andy.yang@na.baicells.com]; Rick Harnish [rick.harnish@na.baicells.com]; Boun Senekham [boun@na.baicells.com]; jesse@baicells.com; Ronald Mao [ronald.mao@na.baicells.com]; Minchul Ho [minchul.ho@na.baicells.com]  
**Subject:** RE: Baicells' plan on PLMN Migration  
**Attachments:** Baicells PLMN Migration Plan Public.pptx

Tom and All,

Please see our response as follows. Also, attached please find the public version of the slide deck.

- (1) The presentation indicates that commercial networks step-by-step migration is expected to take 6 to 9 months and would begin in November of 2019. Can you confirm this? Also, can you provide a date by which all migrations will be completed and Bai Cells will no longer be using the HNI code 311-980? I think it's important that we get a firm deadline.

**Resp: Yes, we confirm that we intend to begin the transition in November 2019. We expect that all migrations can be completed in 6-9 months, but that will depend how our customers upgrade their network elements and what, if any, unforeseen problems may arise.**

- (2) It would be helpful to understand when we can expect to get updates from Bai Cells on progress. At a minimum, I think we would want to receive quarterly updates. We are not expecting anything formal, just something in writing that would allow us to respond to any inquiries.

**Resp: Yes, we will provide written quarterly updates beginning November 1 until the transition is complete.**

- (3) We would like to discuss this matter at an upcoming IMSI Oversight Council (IOC) meeting. I noticed that the presentation is marked "confidential." Can you provide a version of this presentation or other document that we can share with the IOC? As a reminder, the IOC is the consensus-based forum within ATIS that helps to provide input on operational and strategic issues related to the use of HNIs in North America.

**Resp: A public version of the presentation is attached and can be shared at the IOC meeting.**

Bo Wei, PhD  
President & CEO  
Baicells Technologies North America  
469-230-4120(M)  
[bo.wei@baicells.com](mailto:bo.wei@baicells.com)

---

**From:** Tom Goode <tgoode@atis.org>  
**Sent:** Tuesday, September 10, 2019 2:57 PM  
**To:** Bo Wei <bo.wei@na.baicells.com>; McNamer, Natalie <nmcnamer@iconectiv.com>; Steve Barclay <sbarclay@atis.org>  
**Cc:** Coran, Steve <SCoran@lrmansenter.com>; Andy Yang <andy.yang@na.baicells.com>; Rick Harnish <rick.harnish@na.baicells.com>; Boun Senekham <boun@na.baicells.com>; jesse@baicells.com; Ronald Mao <ronald.mao@na.baicells.com>; Minchul Ho <minchul.ho@na.baicells.com>  
**Subject:** RE: Baicells' plan on PLMN Migration

Dear Dr. Wei:

Thank you for sending the PLMN Migration Plan.

I did have a few questions.

- (1) The presentation indicates that commercial networks step-by-step migration is expected to take 6 to 9 months and would begin in November of 2019. Can you confirm this? Also, can you provide a date by which all migrations will be completed and Bai Cells will no longer be using the HNI code 311-980? I think it's important that we get a firm deadline.
- (2) It would be helpful to understand when we can expect to get updates from Bai Cells on progress. At a minimum, I think we would want to receive quarterly updates. We are not expecting anything formal, just something in writing that would allow us to respond to any inquiries.
- (3) We would like to discuss this matter at an upcoming IMSI Oversight Council (IOC) meeting. I noticed that the presentation is marked "confidential." Can you provide a version of this presentation or other document that we can share with the IOC? As a reminder, the IOC is the consensus-based forum within ATIS that helps to provide input on operational and strategic issues related to the use of HNIs in North America.

The next IOC meeting has been scheduled for Friday, September 20 at 1:00-3:00pm EDT. As an HNI code holder, you would be welcome to attend this meeting. If you would like additional information on the meeting, please contact Drew Greco, at [dgreco@atis.org](mailto:dgreco@atis.org).

If you have any questions, please let me know.

Tom

---

**From:** Bo Wei <[bo.wei@na.baicells.com](mailto:bo.wei@na.baicells.com)>

**Sent:** Thursday, August 29, 2019 6:41 PM

**To:** McNamer, Natalie <[nmcnamer@iconectiv.com](mailto:nmcnamer@iconectiv.com)>; Tom Goode <[tgoode@atis.org](mailto:tgoode@atis.org)>; Steve Barclay <[sbarclay@atis.org](mailto:sbarclay@atis.org)>

**Cc:** Coran, Steve <[SCoran@lermansenter.com](mailto:SCoran@lermansenter.com)>; Andy Yang <[andy.yang@na.baicells.com](mailto:andy.yang@na.baicells.com)>; Rick Harnish <[rick.harnish@na.baicells.com](mailto:rick.harnish@na.baicells.com)>; Boun Senekham <[boun@na.baicells.com](mailto:boun@na.baicells.com)>; [jesse@baicells.com](mailto:jesse@baicells.com); Ronald Mao <[ronald.mao@na.baicells.com](mailto:ronald.mao@na.baicells.com)>; Minchul Ho <[minchul.ho@na.baicells.com](mailto:minchul.ho@na.baicells.com)>

**Subject:** Baicells' plan on PLMN Migration

Natalie/Tom/Steve,

Attached please find the PLMN Migration Plan as you requested and we promised to provide during last meeting. Please let us know if you have any questions and suggestions.

Best Wishes,

Bo Wei, PhD  
President & CEO  
Baicells Technologies North America  
469-230-4120(M)  
[bo.wei@baicells.com](mailto:bo.wei@baicells.com)

-----Original Appointment-----

**From:** Bo Wei

**Sent:** Wednesday, August 21, 2019 4:18 PM

**To:** Coran, Steve; Andy Yang; McNamer, Natalie; [tgoode@atis.org](mailto:tgoode@atis.org); [sbarclay@atis.org](mailto:sbarclay@atis.org); Rick Harnish; Boun Senekham; [jesse@baicells.com](mailto:jesse@baicells.com); Ronald Mao; Minchul Ho

**Subject:** Bo Wei's RingCentral Meeting

**Where:** New HNI Transition Discussion with Baicells

Hi there,

Bo Wei is inviting you to a scheduled RingCentral meeting.

Join from PC, Mac, Linux, iOS or Android: <https://meetings.ringcentral.com/j/1483951111>

Or iPhone one-tap :

US: +1(773)2319226,,1483951111#

Or Telephone:

Dial(for higher quality, dial a number based on your current location):

US: +1(773)2319226

Meeting ID: 148 395 1111

International numbers available: <https://meetings.ringcentral.com/teleconference>



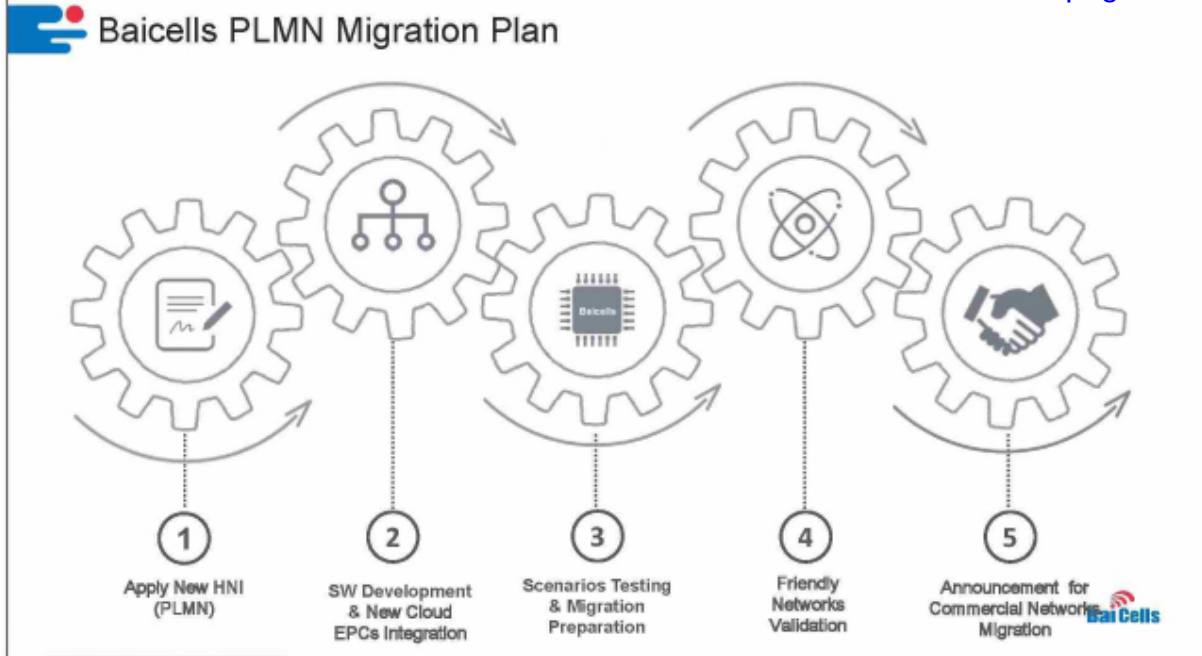


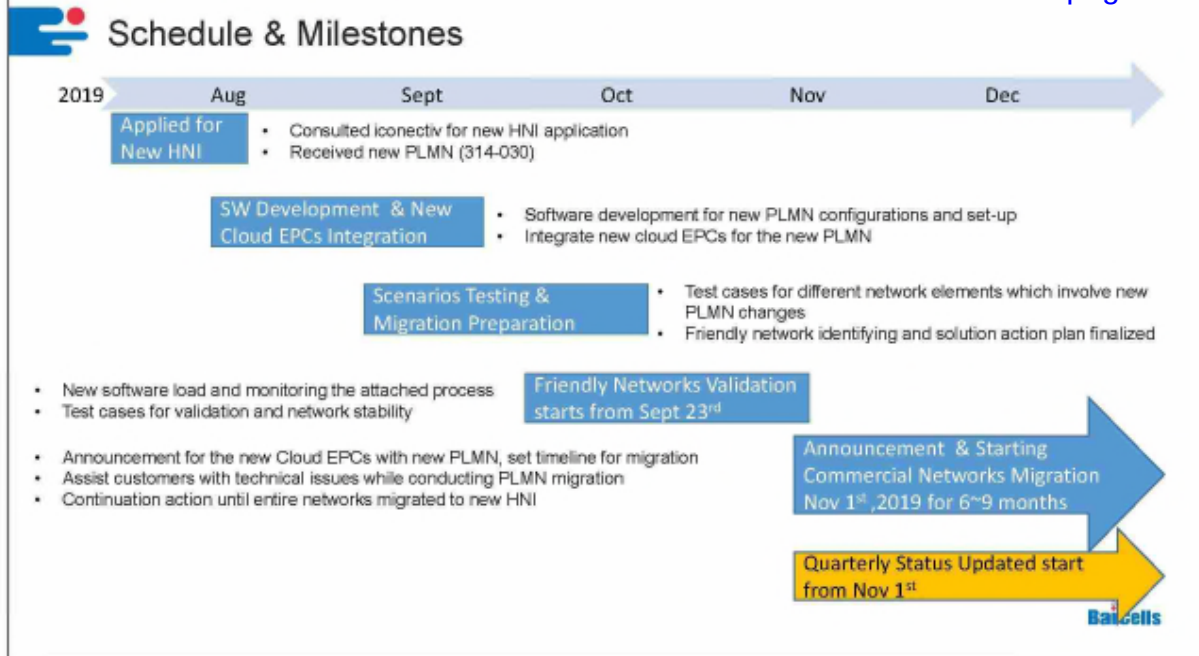
## Background

- PLMN “311-98” historically used in Baicells Cloud EPC appears to be un-registered in ITU
- To help overcome confusion, Baicells applied for and has received a new HNI/PLMN (314-030)
- Multiple scenarios need to be tested prior the new PLMN migration
- Commercial networks step-by-step migration is expected to take 6~9 months to ensure network safety









# **EXHIBIT 3**



## **IOC Meeting Agenda**

### **September 20, 2019, 1:00pm-3:00pm ET**

---

**Chair:** Natalie McNamer, iconectiv, nmcnamer@iconectiv.com

**IMSI Administrator:** imsiadmin@iconectiv.com

- 1. Welcome & Call to Order**
- 2. Introductions**
- 3. Review & Approval of Agenda**
- 4. ATIS Intellectual Property Rights (IPR) & Antitrust Policies**
- 5. Use of MCCMNC Outside the U.S.**
  - 5.1. IOC-2019-00001R000, AT&T Notification Letter on Use of MCCMNC Outside the U.S.**
- 6. PLMN Migration Plan**
  - 6.1. IOC-2019-00004R000, PLMN Migration Plan**
  - 6.2. IOC-2019-00005R000, Correspondence from Ligtel**
- 7. Proposed Updates to IMSI Guidelines**
- 8. Any Other Business**
  - 8.1. IMSI Reclamation**
  - 8.2. IMSI Exhaust Update (IOC-2019-00003R000)**
- 9. Future Meetings**
  - 9.1. TBD**
- 10. Adjournment**



**ATIS Procedure Notice:** *ATIS Forum and Committee activities must adhere to the ATIS Operating Procedures (including basic principles such as fairness, due process, respect for minority opinions, and common sense).*

**IPR Notice:** *In connection with the development of an American National Standard, or other deliverable that requires use of patented inventions, the use of patented inventions shall be governed by the ANSI Patent Policy as adopted by ATIS and as set forth in Section 10 of the "Operating Procedures for ATIS Forums and Committees." Under this policy:*

- *Disclosure of relevant patented inventions at the earliest possible time in the development process is encouraged. An opportunity will be provided for the members to identify or disclose patents that any member believes may be essential for the use of a standard under development.*
- *Neither the Committee, nor its leaders, can ensure the accuracy or completeness of any disclosure, investigate the validity or existence of a patent, or determine whether a patent is essential to the use of an ATIS deliverable.*
- *ATIS prohibits any discussion of licensing terms in its Forums and Committees.*

**Antitrust Risk Notice:** *The leaders further remind attendees that participation in industry fora involves the potential for antitrust concerns or risks. To avoid such concerns and risks, participants should carefully observe the "Operating Procedures for ATIS Forums and Committees". In addition, sensitive discussion topics such as price, territories, specific contractual terms, etc., should be avoided.*

**Questions:** *Participants having questions, comments, or concerns regarding any of these topics should consult with their company's legal counsel, the Committee leadership, ATIS staff, or ATIS legal counsel.*



# **EXHIBIT 4**

Message

**From:** Drew Greco [dgreco@atis.org]  
**Sent:** 9/20/2019 5:50:44 PM  
**To:** ioc@access.atis.org  
**Subject:** IOC Action Items

IOC Participants:

During the September 20, 2019, IOC virtual meeting, action items were assigned to all participants to review the following documentation:

- Proposed revisions to the IMSI Guidelines ([IOC-2019-00006R001](#))
- Proposed revisions to the IBN Guidelines ([IOC-2019-00007R001](#))

During the meeting, the IMSI Guidelines were reviewed and agreed; however, there was insufficient time to review the IBN Guidelines. Please reply all with any questions or feedback on the guideline revisions by **October 11, 2019**. If no feedback is received, the proposed revisions to the IMSI Guidelines as outlined in IOC-2019-00006R001 and IBN Guidelines as outlined in IOC-2019-00007R001 will be accepted.

In addition, participants were asked to review the following PLMN migration plan as presented during the meeting:

- Baicells PLMN Migration Plan ([IOC-2019-00004R000](#))

During the meeting, the migration plan was reviewed and agreed. Please reply all with any questions or feedback on the migration plan by **September 27, 2019**. If no feedback is received, the PLMN Migration Plan from Baicells as outlined in IOC-2019-00004R000 will be agreed.

Please let me know if you have any questions.

Thanks,



**Drew Greco**

ATIS Coordinator – Global Standards Development  
516-796-6087

# **EXHIBIT 5**

Message

**From:** Rick Harnish [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=6E590531F11C460581D53DA925AD6032-RICK]  
**Sent:** 12/20/2019 1:59:40 PM  
**To:** Drew Greco [dgreco@atis.org]; Tom Goode [tgoode@atis.org]; Andy Yang [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=095658fdead141e486f34b31c4e50be0-andy.yang]  
**CC:** scoran@lrmansenter.com; Jesse Raasch [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=73af609a0a0c4f19895f52a4fba1cfa6-Jesse]  
**Subject:** Baicells Migration Plan Update  
**Attachments:** LSL2-#365974-v1-Baicells\_PLMN\_Migration\_Plan\_Update\_121919+sec.PPTX

Mr. Greco,

Bo Wei, former President and CEO of Baicells Technologies NA, has moved on to a new opportunity in a friend's business. Myself, Jesse Raasch and Andy Yang will be communicating our PLMN Migration Plan updates. No replacement has been named yet.

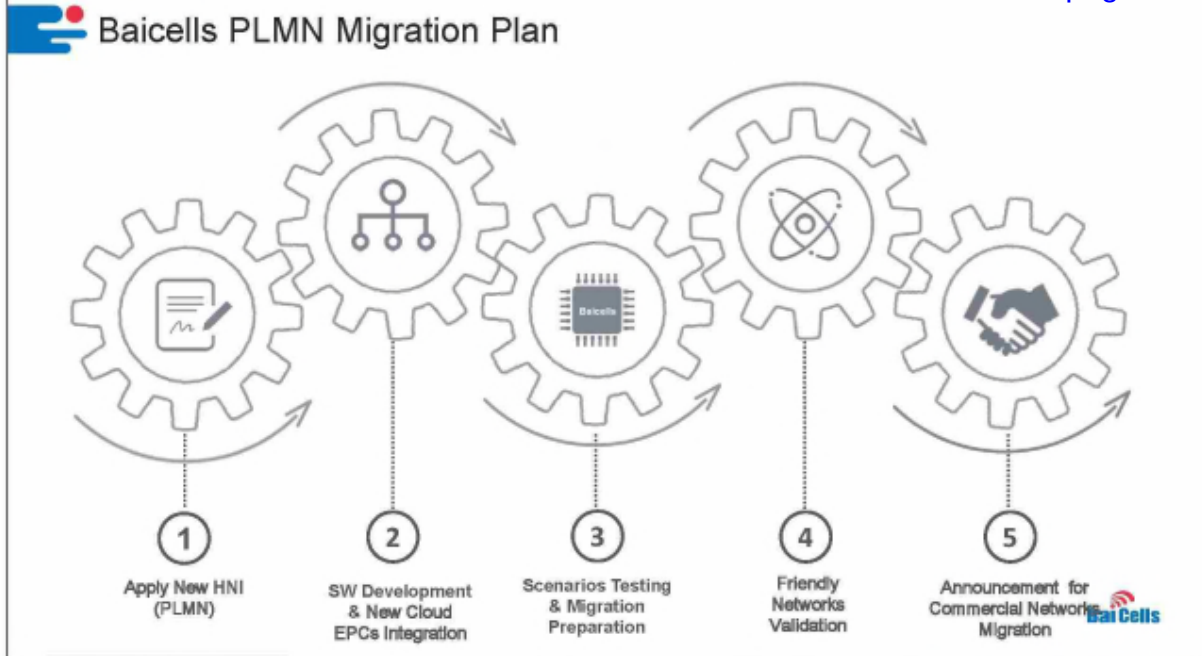
I have attached a PowerPoint slide deck of our progress thus far. Testing with some customers continues and backend operations and firmware are being upgraded. We expect to get more aggressive with the rollout after the new year begins.

Happy Holidays.

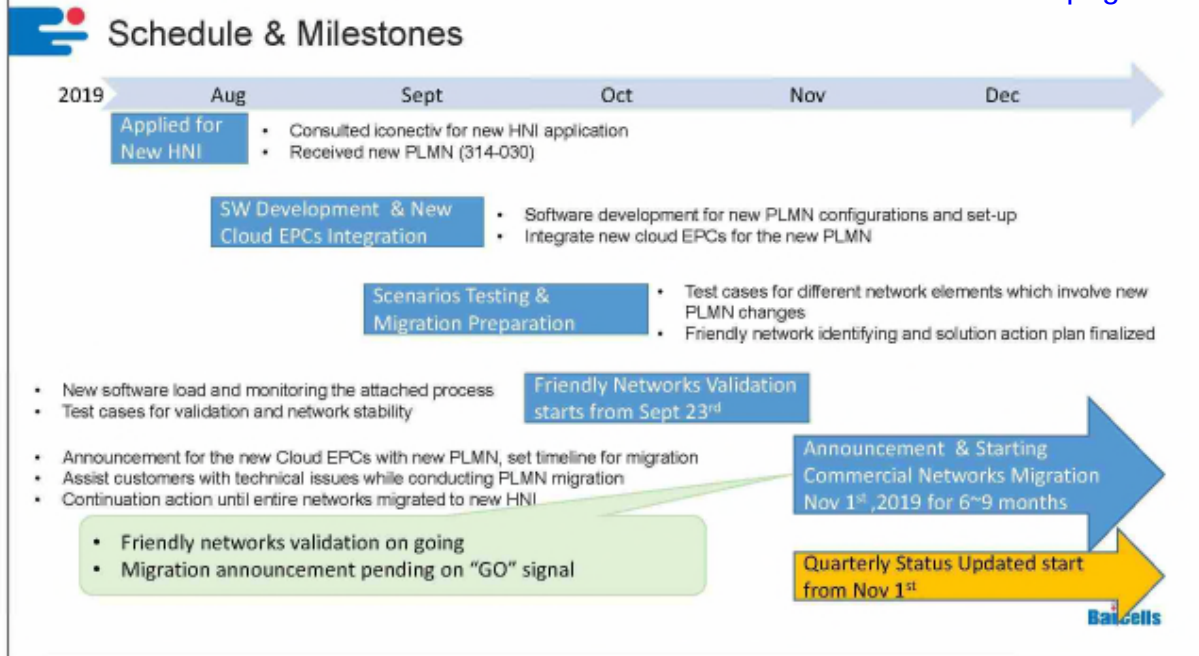
Respectively,

**Rick Harnish**  
Chief Marketing Officer  
Baicells Technologies, NA  
260-307-4000  
rick.harnish@na.baicells.com











## Status

- **PLMN Migration:**
  - The new eNB software release (RTS 3.4.8) combining with new PLMN configuration is in ongoing beta testing with friendly networks
  - 6 friendly networks trialing with new PLMN; 27 eNBs broadcasting and 323 CPEs registering the MMC-MNC 314-030
  - No interference or integration issues have been reported
  - Upgrade to be announced more broadly in early January
- **New PLMN SIMs:**
  - 5,000 new PLMN SIM cards delivered to sales channels/distributors to send to customers for replacement



# **EXHIBIT 6**

Message

**From:** Rick Harnish [rick.harnish@na.baicells.com]  
**Sent:** 2/20/2020 2:28:23 PM  
**To:** Drew Greco [dgreco@atis.org]; Tom Goode [tgoode@atis.org]  
**CC:** scoran@lrmansenter.com; Jesse Raasch [jesse@na.baicells.com]  
**Subject:** RE: Baicells Migration Plan Update  
**Attachments:** Baicells\_PLMN\_Migration\_Plan\_Update\_22020.pptx

Drew,

Attached is our updated Migration Plan Update. We are progressing nicely now. We are upbeat that we will be able to meet our timeline goals.

Respectively,

**Rick Harnish**

Chief Marketing Officer

Mobile: (+1) 260-307-4000

E-mail: [rharnish@baicells.com](mailto:rharnish@baicells.com)

Baicells Technologies Co., Ltd.

**Baicells**

*"Connect More With Less"*

This e-mail and its attachments contain confidential information from Baicells Technologies Co. Ltd., which is intended only for the person or entity whose address is listed above. Any use of the information contained herein in any way (including, but not limited to, total or partial disclosure, reproduction, or dissemination) by persons other than the intended recipient(s) is prohibited. If you receive this e-mail in error, please notify the sender by phone or email immediately and delete it!

---

**From:** Drew Greco <dgreco@atis.org>  
**Sent:** Thursday, February 20, 2020 10:46 AM  
**To:** Rick Harnish <rick.harnish@na.baicells.com>; Tom Goode <tgoode@atis.org>  
**Cc:** scoran@lrmansenter.com; Jesse Raasch <jesse@na.baicells.com>  
**Subject:** RE: Baicells Migration Plan Update

Thanks, Rick. For your reference, here is the Migration Plan update schedule that was developed during the IOC meeting:

(1) Monthly Updates

- a. On a monthly basis, Bai Cells will provide short written updates (email is ok) on the status of the migration plan either:
  - i. (a) Indicating that no issues have arisen and the migration continues as planned toward the July 31, 2020, deadline; or

- ii. (b) explaining any unexpected issues that may have arisen and the impact (if any) of these issues on the migration plan or the associated implementation timeline.
- b. If any issues have arisen, the IOC may request additional information and/or schedule an IOC meeting(s) to discuss this matter.
- c. These updates will be due on/by the 15th of December 2019 and of January, March, April, and June 2020.

(2) Quarterly Reports

- a. On a quarterly basis Bai Cells will provide a more detailed written report:
  - i. Describing the status of the migration efforts and accomplishments to date (including the percentage of each task complete and overall completion percentage);
  - ii. Explaining any deviation from the migration plan and/or associated timeline; and
  - iii. Confirming that the migration will be completed by July 31, 2020.
- b. If any issues have arisen, the IOC may request additional information and/or schedule an IOC meeting(s) to discuss this matter.
- c. These reports will be due on/by the 15th of February, May, and August 2020.

Please let me know if you have any other questions.

Thanks,



**Drew Greco**

ATIS Coordinator – Global Standards Development  
516-796-6087

---

**From:** Rick Harnish <[rick.harnish@na.baicells.com](mailto:rick.harnish@na.baicells.com)>  
**Sent:** Thursday, February 20, 2020 10:41 AM  
**To:** Drew Greco <[dgreco@atis.org](mailto:dgreco@atis.org)>; Tom Goode <[tgoode@atis.org](mailto:tgoode@atis.org)>  
**Cc:** [scoran@lermansenter.com](mailto:scoran@lermansenter.com); Jesse Raasch <[jesse@na.baicells.com](mailto:jesse@na.baicells.com)>  
**Subject:** [EXT] RE: Baicells Migration Plan Update

Drew,

Yes we can. I need to sync up with Jesse to make changes in the status slide. When is the due date? FYI, Andy Yang is no longer with Baicells.

Respectively,

**Rick Harnish**

Chief Marketing Officer

Mobile: (+1) 260-307-4000

E-mail: [rharnish@baicells.com](mailto:rharnish@baicells.com)

Baicells Technologies Co., Ltd.



*"Connect More With Less"*

This e-mail and its attachments contain confidential information from Baicells Technologies Co. Ltd., which is intended only for the person or entity whose address is listed above. Any use of the information contained herein in any way (including, but not limited to, total or partial disclosure, reproduction, or dissemination) by persons other than the intended recipient(s) is prohibited. If you receive this e-mail in error, please notify the sender by phone or email immediately and delete it!

---

**From:** Drew Greco <[dgreco@atis.org](mailto:dgreco@atis.org)>  
**Sent:** Thursday, February 20, 2020 9:56 AM  
**To:** Rick Harnish <[rick.harnish@na.baicells.com](mailto:rick.harnish@na.baicells.com)>; Tom Goode <[tgoode@atis.org](mailto:tgoode@atis.org)>; Andy Yang <[andy.yang@na.baicells.com](mailto:andy.yang@na.baicells.com)>  
**Cc:** [scoran@lermansenter.com](mailto:scoran@lermansenter.com); Jesse Raasch <[jesse@na.baicells.com](mailto:jesse@na.baicells.com)>  
**Subject:** RE: Baicells Migration Plan Update

Hi Rick,

Thank you for the December update on the PLMN Migration Plan. Do you have an update for us to post for the February Quarterly report?

Thank you,



**Drew Greco**  
ATIS Coordinator – Global Standards Development  
516-796-6087

---

**From:** Rick Harnish <[rick.harnish@na.baicells.com](mailto:rick.harnish@na.baicells.com)>  
**Sent:** Friday, December 20, 2019 3:00 PM  
**To:** Drew Greco <[dgreco@atis.org](mailto:dgreco@atis.org)>; Tom Goode <[tgoode@atis.org](mailto:tgoode@atis.org)>; Andy Yang <[andy.yang@na.baicells.com](mailto:andy.yang@na.baicells.com)>  
**Cc:** [scoran@lermansenter.com](mailto:scoran@lermansenter.com); Jesse Raasch <[jesse@na.baicells.com](mailto:jesse@na.baicells.com)>  
**Subject:** [EXT] Baicells Migration Plan Update

Mr. Greco,

Bo Wei, former President and CEO of Baicells Technologies NA, has moved on to a new opportunity in a friend's business. Myself, Jesse Raasch and Andy Yang will be communicating our PLMN Migration Plan updates. No replacement has been named yet.

I have attached a PowerPoint slide deck of our progress thus far. Testing with some customers continues and backend operations and firmware are being upgraded. We expect to get more aggressive with the rollout after the new year begins.

Happy Holidays.

Respectively,

**Rick Harnish**

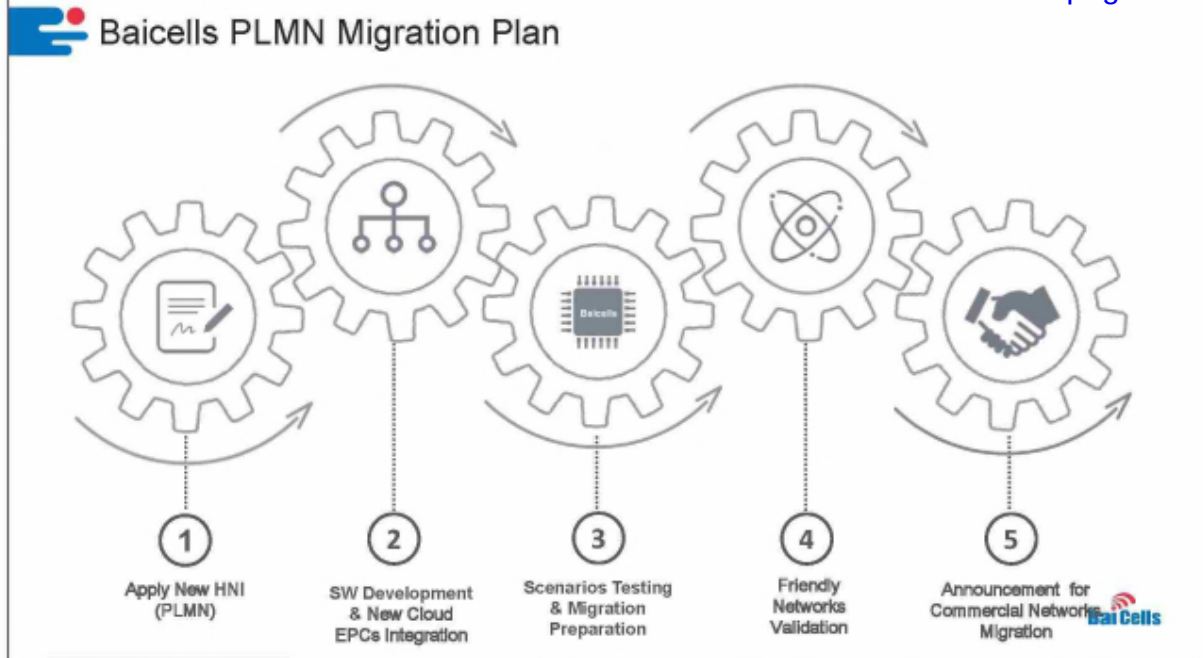
Chief Marketing Officer  
Baicells Technologies, NA  
260-307-4000

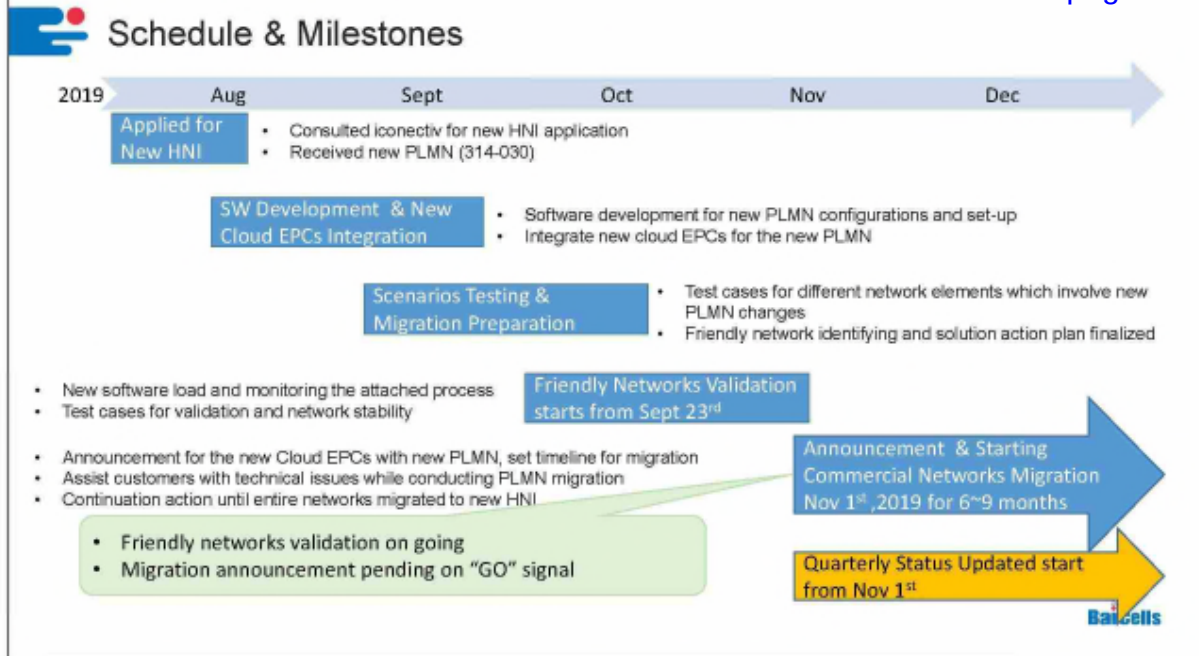
[rick.harnish@na.baicells.com](mailto:rick.harnish@na.baicells.com)

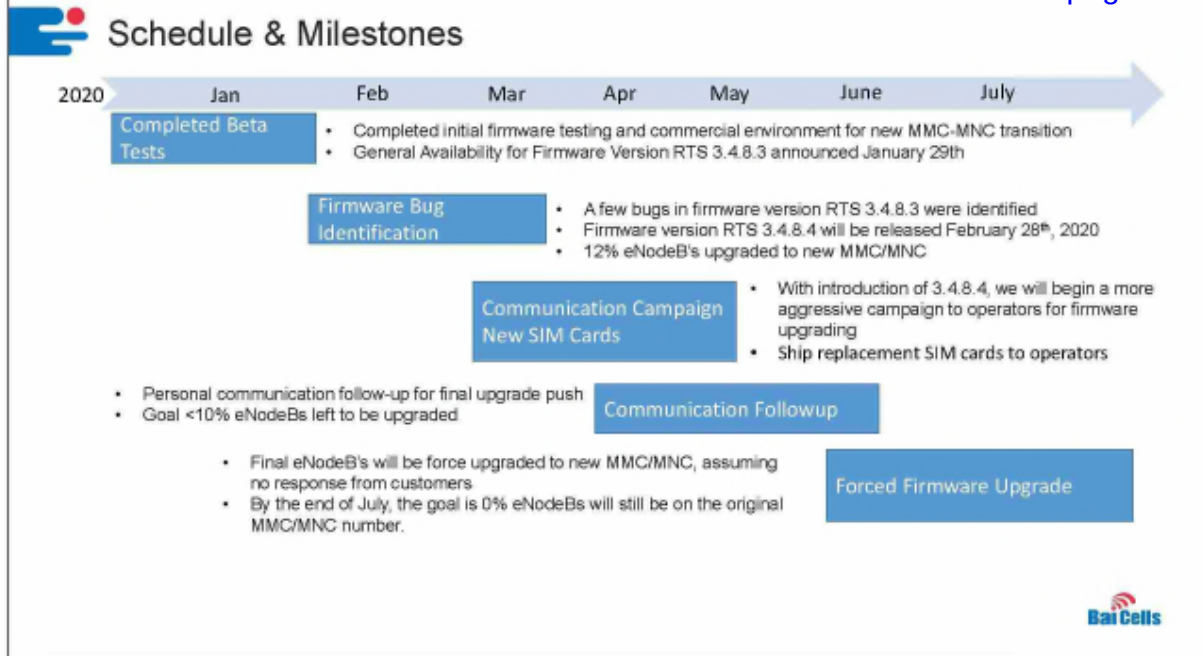














## Status

- **PLMN Migration:**
  - The new eNB software release (RTS 3.4.8.3) introducing with new PLMN configuration was released commercially on January 29<sup>th</sup>, 2020
  - 12% of Online eNodeBs have updated firmware and are broadcasting the MMC-MNC 314-030
  - A few firmware bugs have been noted and a new version RTS 3.4.8.4 will be released on February 28<sup>th</sup>, 2020 and fixes previous noted bugs.
  - Thus far, firmware upgrades have been voluntary by customers. We will begin a more aggressive campaign in March to convince operators to upgrade all eNodeBs to the new firmware.
- **New PLMN SIMs:**
  - 5,000 new PLMN SIM cards delivered to sales channels/distributors to send to customers for replacement
  - New SIM cards will be shipped to operators beginning in late February 2020.



# **EXHIBIT 7**

Message

**From:** Rick Harnish [rick.harnish@na.baicells.com]  
**Sent:** 3/18/2020 11:59:24 AM  
**To:** Drew Greco [dgreco@atis.org]; Tom Goode [tgoode@atis.org]  
**CC:** scoran@lrmansenter.com; Jesse Raasch [jesse@na.baicells.com]; Steve Barclay [sbarclay@atis.org]; Jackie Wohlgemuth [jwohlgemuth@atis.org]  
**Subject:** RE: Baicells Migration Plan Update  
**Attachments:** Baicells\_PLMN\_Migration\_Plan\_Update\_32020.pptx

Drew,

Here is our updated migration plan for March. Thank you for your patience.

Respectively,

**Rick Harnish**

Chief Marketing Officer

Mobile: (+1) 260-307-4000

E-mail: [rharnish@baicells.com](mailto:rharnish@baicells.com)

Baicells Technologies Co., Ltd.

**Baicells**

*"Connect More With Less"*

This e-mail and its attachments contain confidential information from Baicells Technologies Co. Ltd., which is intended only for the person or entity whose address is listed above. Any use of the information contained herein in any way (including, but not limited to, total or partial disclosure, reproduction, or dissemination) by persons other than the intended recipient(s) is prohibited. If you receive this e-mail in error, please notify the sender by phone or email immediately and delete it!

---

**From:** Drew Greco <dgreco@atis.org>  
**Sent:** Wednesday, March 18, 2020 10:12 AM  
**To:** Rick Harnish <rick.harnish@na.baicells.com>; Tom Goode <tgoode@atis.org>  
**Cc:** scoran@lrmansenter.com; Jesse Raasch <jesse@na.baicells.com>; Steve Barclay <sbarclay@atis.org>; Jackie Wohlgemuth <jwohlgemuth@atis.org>  
**Subject:** RE: Baicells Migration Plan Update

Thanks, Rick. Here is the Migration Plan update schedule that was developed during the IOC meeting:

(1) Monthly Updates

- a. On a monthly basis, Bai Cells will provide short written updates (email is ok) on the status of the migration plan either:
  - i. (a) Indicating that no issues have arisen and the migration continues as planned toward the July 31, 2020, deadline; or

- ii. (b) explaining any unexpected issues that may have arisen and the impact (if any) of these issues on the migration plan or the associated implementation timeline.
- b. If any issues have arisen, the IOC may request additional information and/or schedule an IOC meeting(s) to discuss this matter.
- c. These updates will be due on/by the **15th of December 2019 and of January, March, April, and June 2020.**

(2) Quarterly Reports

- a. On a quarterly basis Bai Cells will provide a more detailed written report:
  - i. Describing the status of the migration efforts and accomplishments to date (including the percentage of each task complete and overall completion percentage);
  - ii. Explaining any deviation from the migration plan and/or associated timeline; and
  - iii. Confirming that the migration will be completed by July 31, 2020.
- b. If any issues have arisen, the IOC may request additional information and/or schedule an IOC meeting(s) to discuss this matter.
- c. These reports will be due on/by the **15th of February, May, and August 2020.**

Please let me know if you have any other questions.

Thanks,



**Drew Greco**

ATIS Coordinator – Global Standards Development  
516-796-6087

---

**From:** Rick Harnish <[rick.harnish@na.baicells.com](mailto:rick.harnish@na.baicells.com)>

**Sent:** Wednesday, March 18, 2020 10:01 AM

**To:** Drew Greco <[dgreco@atis.org](mailto:dgreco@atis.org)>; Tom Goode <[tgoode@atis.org](mailto:tgoode@atis.org)>

**Cc:** [scoran@lermansenter.com](mailto:scoran@lermansenter.com); Jesse Raasch <[jesse@na.baicells.com](mailto:jesse@na.baicells.com)>; Steve Barclay <[sbarclay@atis.org](mailto:sbarclay@atis.org)>; Jackie Wohlgemuth <[jwohlgemuth@atis.org](mailto:jwohlgemuth@atis.org)>

**Subject:** [EXT] RE: Baicells Migration Plan Update

We will try to get it to you by the end of the day. What is the publishing dates of your monthly reports? This will help in scheduling future updates.

Respectively,

**Rick Harnish**

Chief Marketing Officer

Mobile: (+1) 260-307-4000

E-mail: [rharnish@baicells.com](mailto:rharnish@baicells.com)

Baicells Technologies Co., Ltd.





*"Connect More With Less"*

This e-mail and its attachments contain confidential information from Baicells Technologies Co. Ltd., which is intended only for the person or entity whose address is listed above. Any use of the information contained herein in any way (including, but not limited to, total or partial disclosure, reproduction, or dissemination) by persons other than the intended recipient(s) is prohibited. If you receive this e-mail in error, please notify the sender by phone or email immediately and delete it!

---

**From:** Drew Greco <[dgreco@atis.org](mailto:dgreco@atis.org)>  
**Sent:** Wednesday, March 18, 2020 9:39 AM  
**To:** Rick Harnish <[rick.harnish@na.baicells.com](mailto:rick.harnish@na.baicells.com)>; Tom Goode <[tgoode@atis.org](mailto:tgoode@atis.org)>  
**Cc:** [scoran@lermansenter.com](mailto:scoran@lermansenter.com); Jesse Raasch <[jesse@na.baicells.com](mailto:jesse@na.baicells.com)>; Steve Barclay <[sbarclay@atis.org](mailto:sbarclay@atis.org)>; Jackie Wohlgemuth <[jwohlgemuth@atis.org](mailto:jwohlgemuth@atis.org)>  
**Subject:** RE: Baicells Migration Plan Update

Hi Rick,

I'm just checking to see if you have a migration plan update for us to post for the March monthly report?

Thank you,



**Drew Greco**

ATIS Coordinator – Global Standards Development  
516-796-6087

---

**From:** Drew Greco  
**Sent:** Thursday, February 20, 2020 3:33 PM  
**To:** Rick Harnish <[rick.harnish@na.baicells.com](mailto:rick.harnish@na.baicells.com)>; Tom Goode <[tgoode@atis.org](mailto:tgoode@atis.org)>  
**Cc:** [scoran@lermansenter.com](mailto:scoran@lermansenter.com); Jesse Raasch <[jesse@na.baicells.com](mailto:jesse@na.baicells.com)>  
**Subject:** RE: Baicells Migration Plan Update

Thanks, Rick. I will post to the IOC page on ATIS Workspace.

Regards,



**Drew Greco**

ATIS Coordinator – Global Standards Development  
516-796-6087

---

**From:** Rick Harnish <[rick.harnish@na.baicells.com](mailto:rick.harnish@na.baicells.com)>  
**Sent:** Thursday, February 20, 2020 3:28 PM  
**To:** Drew Greco <[dgreco@atis.org](mailto:dgreco@atis.org)>; Tom Goode <[tgoode@atis.org](mailto:tgoode@atis.org)>



**Subject:** [EXT] RE: Baicells Migration Plan Update

Drew,

Attached is our updated Migration Plan Update. We are progressing nicely now. We are upbeat that we will be able to meet our timeline goals.

Respectively,

**Rick Harnish**

Chief Marketing Officer

Mobile: (+1) 260-307-4000

E-mail: [rharnish@baicells.com](mailto:rharnish@baicells.com)

Baicells Technologies Co., Ltd.



*"Connect More With Less"*

This e-mail and its attachments contain confidential information from Baicells Technologies Co. Ltd., which is intended only for the person or entity whose address is listed above. Any use of the information contained herein in any way (including, but not limited to, total or partial disclosure, reproduction, or dissemination) by persons other than the intended recipient(s) is prohibited. If you receive this e-mail in error, please notify the sender by phone or email immediately and delete it!

---

**From:** Drew Greco <[dgreco@atis.org](mailto:dgreco@atis.org)>

**Sent:** Thursday, February 20, 2020 10:46 AM

**To:** Rick Harnish <[rick.harnish@na.baicells.com](mailto:rick.harnish@na.baicells.com)>; Tom Goode <[tgoode@atis.org](mailto:tgoode@atis.org)>

**Cc:** [scoran@lrmansenter.com](mailto:scoran@lrmansenter.com); Jesse Raasch <[jesse@na.baicells.com](mailto:jesse@na.baicells.com)>

**Subject:** RE: Baicells Migration Plan Update

Thanks, Rick. For your reference, here is the Migration Plan update schedule that was developed during the IOC meeting:

(1) Monthly Updates

- a. On a monthly basis, Bai Cells will provide short written updates (email is ok) on the status of the migration plan either:
  - i. (a) Indicating that no issues have arisen and the migration continues as planned toward the July 31, 2020, deadline; or
  - ii. (b) explaining any unexpected issues that may have arisen and the impact (if any) of these issues on the migration plan or the associated implementation timeline.
- b. If any issues have arisen, the IOC may request additional information and/or schedule an IOC meeting(s) to discuss this matter.

(2) Quarterly Reports

- a. On a quarterly basis Bai Cells will provide a more detailed written report:
  - i. Describing the status of the migration efforts and accomplishments to date (including the percentage of each task complete and overall completion percentage);
  - ii. Explaining any deviation from the migration plan and/or associated timeline; and
  - iii. Confirming that the migration will be completed by July 31, 2020.
- b. If any issues have arisen, the IOC may request additional information and/or schedule an IOC meeting(s) to discuss this matter.
- c. These reports will be due on/by the 15th of February, May, and August 2020.

Please let me know if you have any other questions.

Thanks,

 **Drew Greco**  
ATIS Coordinator – Global Standards Development  
516-796-6087

---

**From:** Rick Harnish <[rick.harnish@na.baicells.com](mailto:rick.harnish@na.baicells.com)>  
**Sent:** Thursday, February 20, 2020 10:41 AM  
**To:** Drew Greco <[dgreco@atis.org](mailto:dgreco@atis.org)>; Tom Goode <[tgoode@atis.org](mailto:tgoode@atis.org)>  
**Cc:** [scoran@lermansenter.com](mailto:scoran@lermansenter.com); Jesse Raasch <[jesse@na.baicells.com](mailto:jesse@na.baicells.com)>  
**Subject:** [EXT] RE: Baicells Migration Plan Update

Drew,

Yes we can. I need to sync up with Jesse to make changes in the status slide. When is the due date? FYI, Andy Yang is no longer with Baicells.

Respectively,

**Rick Harnish**

Chief Marketing Officer

Mobile: (+1) 260-307-4000

E-mail: [rharnish@baicells.com](mailto:rharnish@baicells.com)

Baicells Technologies Co., Ltd.

  
"Connect More With Less"

This e-mail and its attachments contain confidential information from Baicells Technologies Co. Ltd., which is intended only for the person or entity whose address is listed above. Any use of the information contained herein in any way (including, but not limited to, total or partial disclosure, reproduction, or dissemination) by persons other than the intended recipient(s) is prohibited. If you receive this e-mail in error, please notify the sender by phone or email immediately and delete it!

---

**From:** Drew Greco <[dgreco@atis.org](mailto:dgreco@atis.org)>  
**Sent:** Thursday, February 20, 2020 9:56 AM  
**To:** Rick Harnish <[rick.harnish@na.baicells.com](mailto:rick.harnish@na.baicells.com)>; Tom Goode <[tgoode@atis.org](mailto:tgoode@atis.org)>; Andy Yang <[andy.yang@na.baicells.com](mailto:andy.yang@na.baicells.com)>  
**Cc:** [scoran@lrmansenter.com](mailto:scoran@lrmansenter.com); Jesse Raasch <[jesse@na.baicells.com](mailto:jesse@na.baicells.com)>  
**Subject:** RE: Baicells Migration Plan Update

Hi Rick,

Thank you for the December update on the PLMN Migration Plan. Do you have an update for us to post for the February Quarterly report?

Thank you,

 **Drew Greco**  
ATIS Coordinator – Global Standards Development  
516-796-6087

---

**From:** Rick Harnish <[rick.harnish@na.baicells.com](mailto:rick.harnish@na.baicells.com)>  
**Sent:** Friday, December 20, 2019 3:00 PM  
**To:** Drew Greco <[dgreco@atis.org](mailto:dgreco@atis.org)>; Tom Goode <[tgoode@atis.org](mailto:tgoode@atis.org)>; Andy Yang <[andy.yang@na.baicells.com](mailto:andy.yang@na.baicells.com)>  
**Cc:** [scoran@lrmansenter.com](mailto:scoran@lrmansenter.com); Jesse Raasch <[jesse@na.baicells.com](mailto:jesse@na.baicells.com)>  
**Subject:** [EXT] Baicells Migration Plan Update

Mr. Greco,

Bo Wei, former President and CEO of Baicells Technologies NA, has moved on to a new opportunity in a friend's business. Myself, Jesse Raasch and Andy Yang will be communicating our PLMN Migration Plan updates. No replacement has been named yet.

I have attached a PowerPoint slide deck of our progress thus far. Testing with some customers continues and backend operations and firmware are being upgraded. We expect to get more aggressive with the rollout after the new year begins.

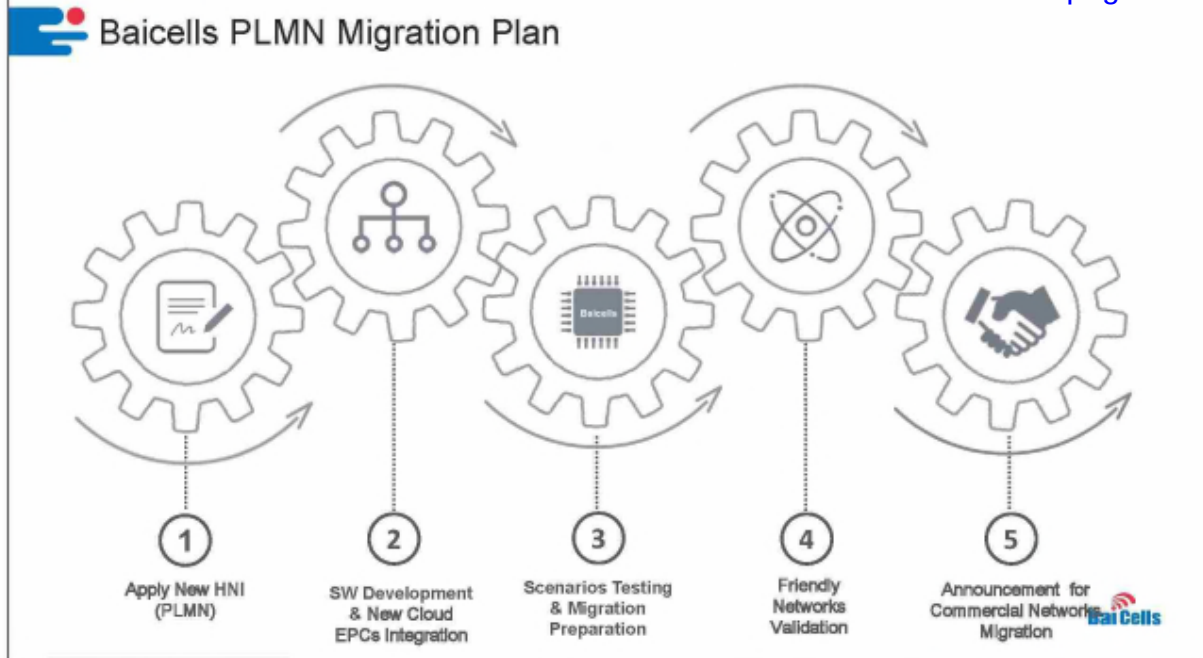
Happy Holidays.

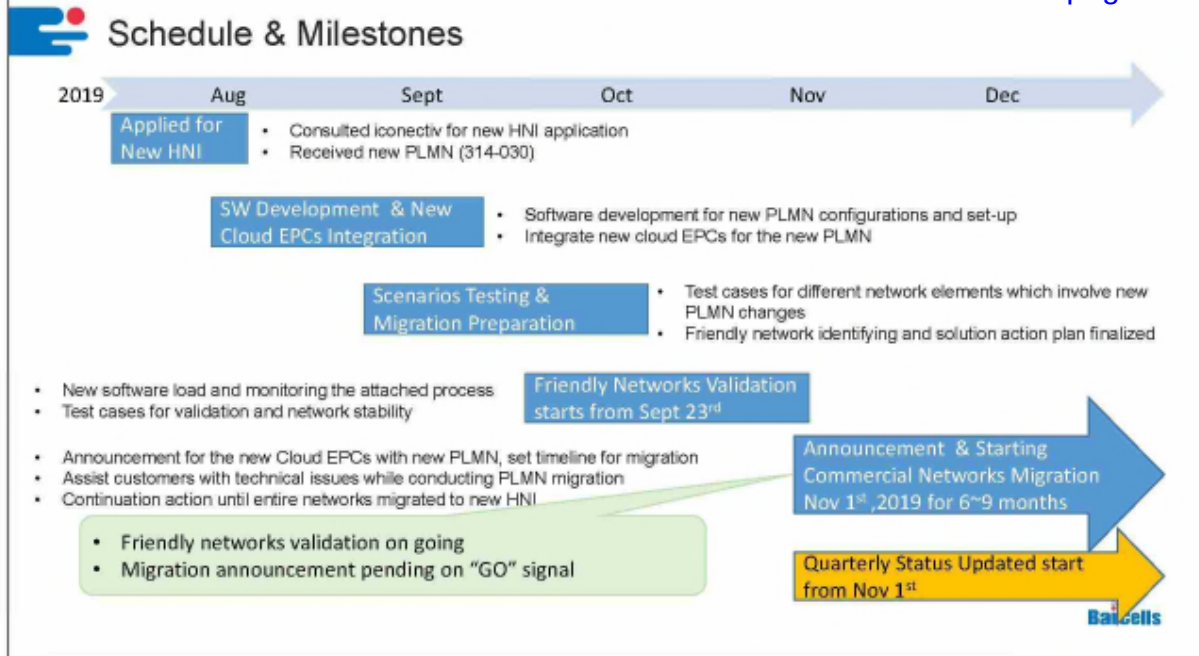
Respectively,

**Rick Harnish**  
Chief Marketing Officer  
Baicells Technologies, NA

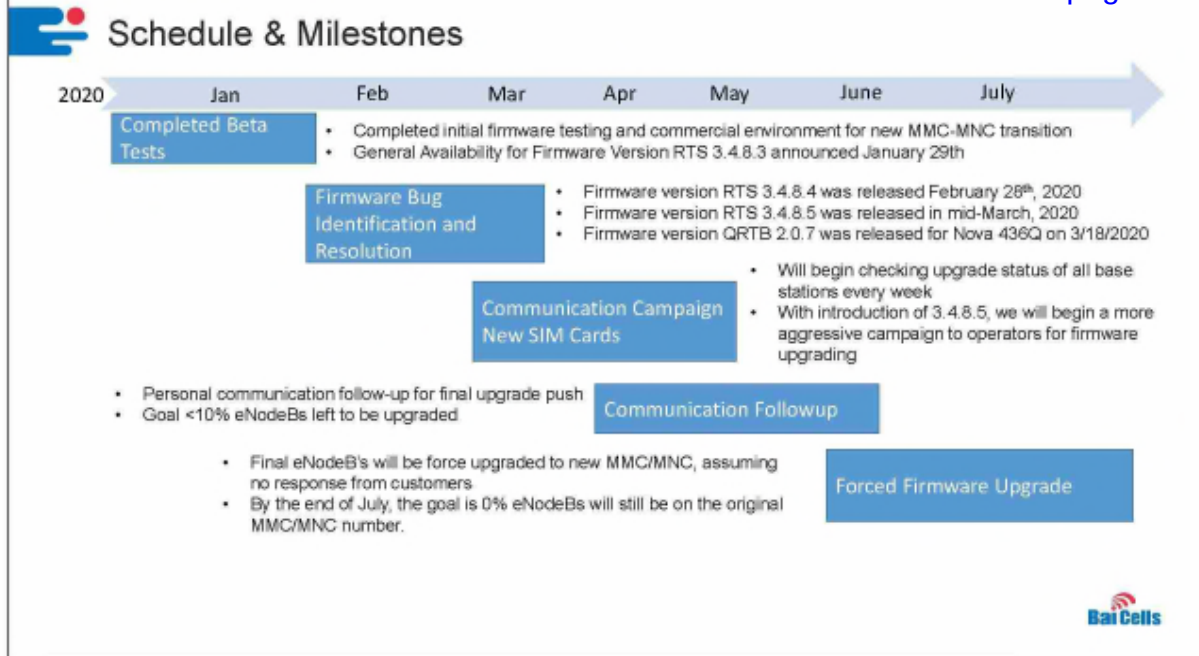
















## Status

- **PLMN Migration:**
  - A few firmware bugs have been noted and a new version RTS 3.4.8.5 will be released on March 18th, 2020 and fixes previous noted bugs. For Nova 243, Nova 233, Nova 227
  - Firmware QRTB 2.0.7 for Nova 436Q is finished and released on March 18<sup>th</sup>, 2020
  - We will begin a more aggressive campaign now that all firmware files are completed, to convince operators to upgrade all eNodeBs to the new firmware.
- **New PLMN SIMs:**
  - 5,000 new PLMN SIM cards delivered to sales channels/distributors to send to customers for replacement
  - New SIM cards will be shipped to operators beginning in late February 2020.
  - Some supply chain delays due to Coronavirus issues are delaying some future shipments.



# **EXHIBIT 8**

## RTS 3.4.8 - New eNB software has been released!

Welcome | **Announcements**

 **jesse** CTO & VP, Emerging Business 1  Jan 29

RTS 3.4.8 for Nova R9 TDD base stations has been released. This version includes many bug fixes as well as adding important features like uplink 64 QAM, PRACH format 2, subframe config 0, 1588v2 sync, and jumbo frames. Starting with this version, we will also be changing the CloudCore PLMN to 314030.

### SUPPORTED HARDWARE:

Nova 243 (2\*10W eNB | BRU3501,3510,3511)

Nova 233 (2\*1W eNB | mBS1100,1105,11002)

Nova 227 (2\*250mW eNB | pBS2120,11004)

**NOTICE:** BEFORE UPGRADING THE ENB, you will want to check if any Baicells Cat6 (Atom CD06) CPEs are connected to the eNB. For every CAT6 CPE which is connected to the eNB, you will want to verify that *roaming* is set to **enabled**. If roaming is set to disabled on any CAT6 CPE, it will prevent them from attaching to the eNB after the upgrade if the SIM card used does not begin with "314030". These CPEs also use the following model names: EG7010CM11, EG7010AM11, or EG2013BM11. You can find the model names listed in the OMC under CPE > Monitor. From the CPE webgui, you can find the roaming setting on the Settings > LTE > Internet Settings page.

LAN Settings
LTE
Network Selection
Internet Settings
Edit APN Profile
PIN Management
Cell Selection

### Internet Settings

#### Roaming Settings

Roaming Settings
☒ Enable
☐ Disable

Apply
Cancel

**NOTICE:** BEFORE UPGRADING THE ENB, please check the firmware version, eNBs with "Ba1Station\_V100R001C00B100" or earlier versions will need to upgrade to "Ba1Station\_V100R001C00B110" prior upgrading to RTS 3.4.8

**NOTICE:** BEFORE UPGRADING THE ENB, if using Cloud EPC configuration, make sure that the Cloud EPC switch is set to Enable on the Quick Settings page.

### For the CloudCore & HaloB users:

Software Download: [https://na.baicells.com/download/Ba1BS\\_RTS\\_3.4.8.3.IMG](https://na.baicells.com/download/Ba1BS_RTS_3.4.8.3.IMG) 

### For the Local EPC users:

Software Download: [https://na.baicells.com/download/Ba1BS\\_RTS\\_3.4.8.IMG](https://na.baicells.com/download/Ba1BS_RTS_3.4.8.IMG) 

### Changelog:

```

=====
Version Ba1BS_RTS_3.4.8
=====

New Features:
- Added: Uplink 64 QAM
- Added: PRACH format 2 (cell radius up to 29km)
- Added: TDD subframe configuration 0 (DL:UL ratio = 1:3)
- Added: Cold reset
- Added: SIB barring
- Added: 1588v2 sync
- Added: Jumbo frames (up to 1600 MTU)
- Added: Cell type configuration
- Added: XML configuration file format

Bug Fixes:
- Fixed: Packet loss in X2 handover
- Fixed: UL GBR cannot be guaranteed
- Fixed: Average RRC and Max RRC counters are not accurate
- Fixed: Random access in format 2 and 4 not working with 5MHz channel bandwidth
- Fixed: No traffic in dedicated bearer
- Fixed: DNS not working in VLAN interfaces
- Fixed: CoreDump with 32 UEs in 5MHz channel bandwidth
- Fixed: Cell cannot go active when PLMN is changed in HaloB mode
    
```

# **EXHIBIT 9**

**Rick Harnish**

---

**From:** Baicells Technologies <marketing\_na@baicells.com>  
**Sent:** Friday, February 14, 2020 4:04 PM  
**To:** Rick.harnish@baicells.com  
**Subject:** Your BaiWeekly Update

February 17, 2020

The logo for Baiweekly, featuring the word "Baiweekly" in a white, sans-serif font on an orange background.

Follow us on social media!

---

MWC Barcelona 2020 is Cancelled

**BUT WE'RE COMING TO SEE YOU**

across the nation with our brand-new season of "Rick's Road Trip 2020"!



Obviously, Baicells Technologies will not be exhibiting at MWC Barcelona 2020, since it was cancelled due to global coronavirus outbreak concerns.

Nevertheless, Baicells would like to express its appreciation to the GSMA, as well as the government of Spain for taking necessary precautions and putting top priority on the health and safety of the exhibitors, staff and the general attendees of the MWC2020 conference.

Baicells would also like to thank you, our customers and industrial partners for your support. While we regrettably don't have the chance to meet you at our MWC Barcelona 2020 booth, we are still attending [WISPAmerica 2020](#) in Dallas in mid-March. We will also be exhibiting at the [CCA Mobile Carriers Show](#) and [IWCE Expo](#) this spring. We welcome you to visit our booths.

Rick Harnish, Baicells CMO, is hitting the road again this summer to bring you a new season of "Rick's Road Trip". The last four years, Rick has traveled the continent visiting our customers in their hometowns, offices, customer locations and tower sites. You can view some of last year's visits on the [Baicells Technologies North America YouTube Channel](#). We hope to bring many more excursions this year as we focus on "Connecting the Other Half of the World".

Our sales and marketing teams is interested in scheduling a site visit from Rick or other Baicells staff to see how Baicells can help you to grow your business. Have an interesting case study, we would love to come out and do a Vlog case study of your work with Baicells.

---

---



# CASE STUDY

with *OPEN Broadband*



Open Broadband sat down with Baicells CMO, Rick Harnish, to talk about how they have been dedicated to helping to connect the rural area in North Carolina to the rest of the world.

[Watch the video here!](#)

---

## Software Updates

RTS 3.4.8 - New eNB software has been released!

RTS 3.4.8 for Nova R9 TDD base stations has been released. This version includes many bug fixes as well as adding important features like uplink 64 QAM, PRACH format 2, subframe config 0, 1588v2 sync, and jumbo frames. Starting with this version, we will also be changing the CloudCore PLMN to 314030.

[Click here to learn more!](#)

---



### **“Baicells Technologies Signs Streakwave Wireless, Inc., as National Stocking Distributor”**

Dallas, TX & San Jose, CA - January, 2020 - Baicells Technologies, a leading global provider of disruptive LTE solutions, announced today that Streakwave Wireless, Inc. “Streakwave”, a global distributor of wireless networking equipment and emerging technologies has joined the ranks of the Authorized Baicells Distribution (ABD) channel.

By signing on as an Authorized Baicells Distributor, Baicells becomes Streakwave’s first full solution fixed wireless LTE manufacturing partner. This partnership caps another successful year for Baicells. As we move into 2020 and the CBRS spectrum opens, Baicells is well positioned to continue our leading position in the fixed LTE wireless broadband space.

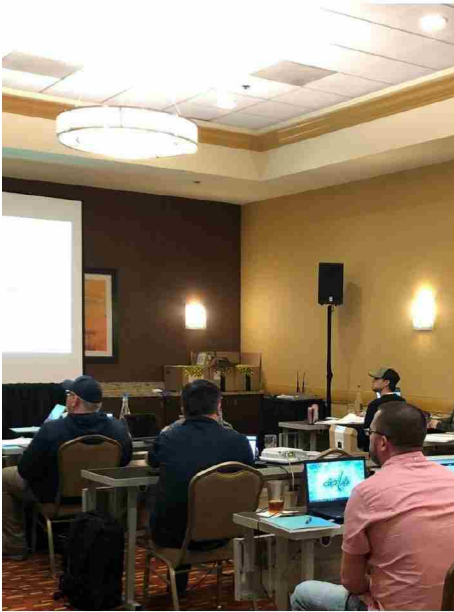
[Read more](#)

---

---

### **Sacramento Certification Recap**





Sacramento, CA - January, 2020 - Baicells Technologies, a leading global provider of disruptive LTE solutions, held its first certification training of 2020 in Sacramento.

New Baicells partners and customers participated in the Associate Certification program's preparatory class, *Baicells Installation & Basic Troubleshooting* (BIBT), and took the hands-on and written competency exam to achieve their certificates. The instructor was Baicells's senior support engineer, Nitisha Potti, who has consistently received high praise for her knowledge and ability to facilitate learning. Participant feedback included "Great course" and "It was wonderful getting to know the

product and what is needed for installing the equipment"

.Baicells wants to share our excitement about LTE and how to successfully deploy and operate broadband wireless networks. By helping operators be successful in planning, deploying, managing, supporting, and optimizing their Baicells equipment through the certification program, we hope to share our excitement with you. For more information about the Baicells professional certification program and training, Please visit: <https://na.baicells.com/certification-training/>

As we go into full CBRS mode, stay tuned for more training updates in the coming months.

---



Baicells Technologies, a manufacturer of LTE fixed wireless broadband equipment, proudly announces several products have been granted Part 96 CBRS Certification by the FCC. The products are the Nova 436Q, Nova 233, Nova R9 and the Atom OD-06 Low Gain and High Gain UEs. Additionally, the Nova 227 is going through testing procedures now.

"This is a great milestone for our legacy NN license users and current and future CBRS customers. Stay Tuned, more to come!" stated Rick Harnish, CMO of Baicells Technologies.

Baicells has been performing Initial Commercial Deployment (ICD) CBRS testing with multiple operators.

Mike Harrison with Calpines Wireless in California embraces the 436Q, "The 436Q has great performance improvement. Latency has improved and our customers are getting their speed during peak evening loads. CA mode of the 436Q's is working as designed. Our Cat 6 UE's are reaching our towers as far as 11 miles away. Signals are well balanced across all four elements of the UE. The Baicells Atom CAT6 UE's work much better than the CAT4 UEs."

Atom CAT4 UE certification testing has commenced, and certification is expected before April.

Please contact [sales\\_na@baicells.com](mailto:sales_na@baicells.com) for more information.

---

## CloudCore Auto Bill Pay Feature

Wednesday, December 18<sup>th</sup>, the Baicells CloudCore was updated. This update was announced in our community forum and on our Facebook Operator Support Group. Unfortunately, the announcement was missed by some of our customers. For that we apologize. Several key features were added to the CloudCore, including CBRS SAS functionality and also a much asked for feature of Auto Bill Pay. [Here](#) is a link to the OMC & BOSS Changelog and upgrade announcement.

Auto Bill Pay allows customers to enter a credit card number into the CloudCore interface to automatically pay their monthly Cloudcore active SIM card invoices. By default, this feature is turned on for all customers. When an operator logs in the first time, they need to read and accept the Auto Bill Pay Terms and Conditions. Once this has been done, the operator is forwarded to a page where their credit card information can be entered. This information needs to be entered in order to proceed into CloudCore.

If operators do not wish to pay their invoices automatically by credit card, the feature can be turned off. However, they are asked to send an email to [support\\_na@baicells.com](mailto:support_na@baicells.com) to request Auto Bill Pay be turned off. Support will in turn work with sales and accounting to approve this request.

**OMC & BOSS Changelog and upgrade announcement**

---

## Baicells Certification Training

# Baicells

## LTE CERTIFICATION TRAINING

While it's true that Baicells designs its products to be plug-and-play, the LTE technology that makes it run is fairly complicated in comparison with other technologies. The Baicells engineering team rewrote the LTE code to make it more efficient, as it had evolved over several years of 3GPP revisions. So, in addition to the practical, real-world application of this training and certification, the program will also give you a deeper understanding and appreciation of the intelligence behind the machines.

This hands-on course is intended for professionals who plan, install, configure, and maintain Baicells eNodeB and user equipment. It is also considered a foundational course for understanding LTE technology and serves as a prerequisite for follow-up courses.

**[For more details and to get registered, click here!](#)**





**Winncom Technologies**  
Premier Global Distribution

**WINNCOM HOSTED**

**Baicells**

**Baicells Certification Training**  
at WISPAmerica 2020

**REGISTER NOW**

**Special Offer!**

Registered attendees receive **\$500 Credit** towards your next Baicells basestation purchase from Winncom!  
*(One per attendee, ask your Winncom sales rep for more details)*

[Register](#)

### Ongoing Promotions

**NOVA 233**  
with **Halo B**

**ONLY!**

**\$2,799.99** USD





## CBRS E

(1) 3.5GHz No  
MBS31001-CA/DC

(5) 3.5GHz Atc  
EG7010A-M11

(5) 3.5GHz Atc  
EG7010C-M11

(10) SIM Cards

\*COMES with 1



# 4360

## Bur

---

---

Getting Started



This is a reminder that if you're new to Baicells equipment, [start here](#).

---

---

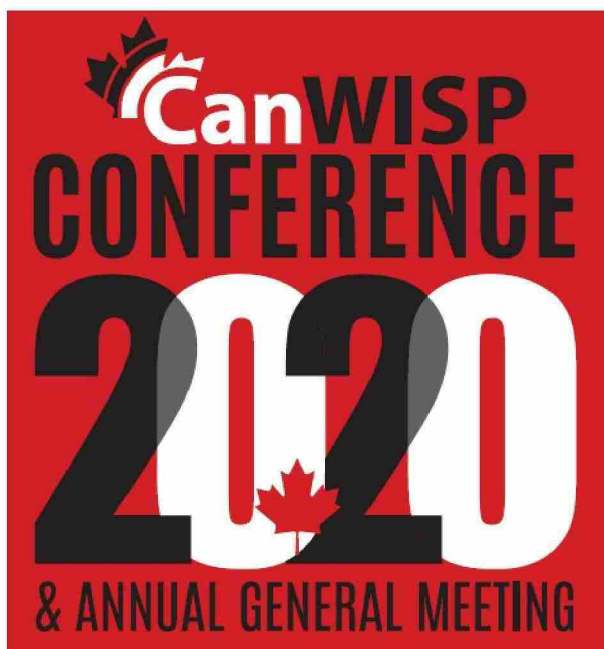


We would love to hear how Baicells helps you!  
Reach out to us at [marketing\\_na@baicells.com](mailto:marketing_na@baicells.com)

---

---

### Upcoming Events



Ottawa, Canada  
March 2nd-4th





**Baicells Technologies**

Need Support?

(888) 502-5585

(972) 357-6412

[support\\_na@baicells.com](mailto:support_na@baicells.com)

[FAQ](#)



Baicells Technologies | 555 Republic Drive, Suite 200, Plano, TX , Plano, TX 75074

[Unsubscribe {recipient's email}](#)

[Update Profile](#) | [About Constant Contact](#)

Sent by [marketing\\_na@baicells.com](mailto:marketing_na@baicells.com) in collaboration with



**THIS IS A TEST EMAIL ONLY.**

This email was sent by the author for the sole purpose of testing a draft message. If you believe you have received the message in error, please contact the author by replying to this message. Constant Contact takes reports of abuse very seriously. If you wish to report abuse, please forward this message to [abuse@constantcontact.com](mailto:abuse@constantcontact.com).

# **EXHIBIT 10**

## QRTB 2.0.7 - New eNB software has been released!

**jesse** CTO & VP, Emerging Business

1d

QRTB 2.0.7 for Nova 436Q base stations has been released. This version adds DC mode and SAS support. Starting with this version, we will also be changing the CloudCore PLMN to 314030.

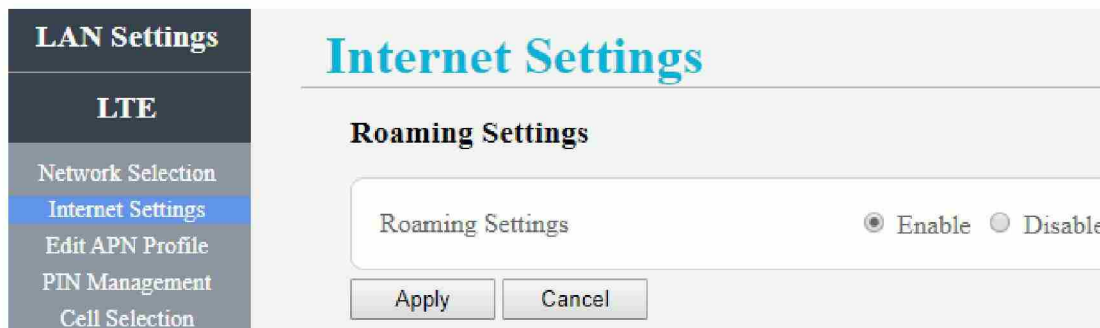
Mar 18

Remember, a license key will be required to unlock CA or DC mode. This key should have been provided at time of purchase, so if you have not received a license key, please reach out to sales ([sales\\_na@baicells.com](mailto:sales_na@baicells.com)) to obtain the key. 1 / 1  
Mar 18

### SUPPORTED HARDWARE:

Nova 436Q (4\*1W eNB | mBS31001)

**⚠ NOTICE:** BEFORE UPGRADING THE ENB, you will want to check if any Baicells Cat6 (Atom OD06) CPEs are connected to the eNB. For every CAT6 CPE which is connected to the eNB, you will want to verify that *roaming* is set to **enabled**. If roaming is set to disabled on any CAT6 CPE, it will prevent them from attaching to the eNB after the upgrade if the SIM card used does not begin with "314030". These CPEs also use the following model names: EG7010CM11, EG7010AM11, or EG2013BM11. You can find the model names listed in the OMC under CPE > Monitor. From the CPE webgui, you can find the roaming setting on the Settings > LTE > Internet Settings page.



1d ago

Software Download: [https://na.baicells.com/download/BaiBS\\_QRTB\\_2.0.7.IMG](https://na.baicells.com/download/BaiBS_QRTB_2.0.7.IMG)

### Changelog:

=====  
Version BaiBS\_QRTB\_2.0.7  
=====

#### New Features:

- Added: Dual Carrier (32+32 users)
- Added: SAS Support

#### Bug Fixes:

- Fixed: Dummy TTI issue may cause memory leak and reboot eNB if in DC mode
- Fixed: Changing IPsec Enable/Disable parameter may cause coredump
- Fixed: Enabling SAS with MME pool enabled may cause coredump
- Fixed: LGW may not assign an IP address to a UE in bridge mode configuration
- Fixed: 2nd Cell may not become active after system startup
- Fixed: Cell not active after changing carrier setting in OMC
- Fixed: Coredump when modifying P-max parameter in webGUI
- Fixed: OMC will incorrectly display same UE count for both cells in DC mode
- Fixed: Coredump caused by error message reported by DSP to MAC
- Fixed: Coredump caused by TR069 message format issue

USDC IN/ND case 1:20-cv-00037-HAB-SLC document 35-3 filed 04/03/20 page 72 of 74

Known Issues:

- UE count may display wrong in high noise environment due to false detection of UL QCI

Requirements:

- Software license required to unlock CA or DC mode

# **EXHIBIT 11**

## ANNOUNCEMENT: Retiring the original PLMN number

**rick.harnish**  Director of WISP Markets

23h

We are currently running two separate CloudCore EPC environments and will be shutting down the original one on July 1, 2020. We will be retiring the original CloudCore PLMN and are replacing it with our new PLMN 314030. Our original PLMN code was five digits and we are moving to a more standard North America six digit code. What does this mean to you, the operators?

We are outlining the steps below. All systems on Baicells side are ready for this transition. We ask for your cooperation as we seek to meet our July 1st deadline. Those devices not upgraded to the most recent firmware as of this date run the risk of going offline. We hope to prevent repetitive requests and reaching out by phone to operators who have not upgraded. Please schedule your upgrades soon. Proceed with the following steps in order. Work with support if you have additional questions.

1. For Band 41/42/43/48 Baicells Cat6 and third-party CPEs, the roaming parameter needs to be checked and set to enable. Currently, the Cat6 firmware does NOT set roaming on by default.



3. For all Baicells Cat4 CPEs, no action is required. Roaming is already enabled by default and cannot be changed.
4. Upgrade eNBs to the most recent firmware versions These versions automatically update all settings in the eNodeBs to work on the new PLMN EPC environment.

**Nova 227/233/243 software (RTS 3.4.8.5)**

**Nova 436Q software (QRTB 2.0.7)**

**LTE-U software (191121T01)**